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TAPEWORM CYSTS (DITHYRIDIUM CYNOCEPHALI N.
SP.) IN THE MUSCLES OF A MARSUPIAL WOLF
(THYLACINUS CYNOCEPHALUS)

By B. H. RANSOM

WITH FIGURE

At the autopsy of a captive marsupial wolf (*Thylacinus cynocephalus*), which died in November, 1904, at the National Zoological Park, Washington, D. C., where it had been kept since September 3, 1902, the voluntary muscles and heart were found by Dr. A. Hassall heavily infested with tapeworm cysts (specimens No. 3888 and 4060, Helminthological Collection, Bureau of Animal Industry).

These cysts, whitish in color, oval, measure 1 to 2 mm. in diameter. The wall of the cyst, 50 to 150 μ in thickness, is composed of fibrous connective tissue. At each pole, amid the muscle fibers in which the cyst is imbedded, there is a deposit of fat globules as commonly occurs in connection with the cysts of *Trichinella*. The larval tapeworm almost entirely fills the cavity of the cyst. It is covered with a cuticle about 5 μ thick. The parenchymatous tissue composing the bulk of the body contains numerous calcareous corpuscles. A caudal vesicle is lacking. The scolex in all of the specimens examined was completely invaginated. It is furnished with four well developed suckers 150 to 200 μ in diameter and bears no trace of a rostellum. The excretory canals open into a tube-like invagination at the posterior end of the body, lined with cuticula and measuring 150 to 200 μ in depth and about 25 μ in diameter.

A number of similar larval forms have heretofore been reported from lizards, snakes, monkeys, field-mice, rabbits, pole-cats, martens, weasels, birds, cats, dogs, foxes, ichneumons, and rats, and have been grouped together in the genus *Dithyridium* Rudolphi, 1819, the name of which was improperly changed by Diesing (1850) to *Piestocystis*. In most cases the worms have been found in relation with the body cavity, its membranes, or contained viscera, and, except in the present instance, have not been reported in the voluntary muscles nor in the heart.

The life history of none of the species included in *Dithyridium* is known. It seems, however, safe to infer that these forms represent intermediate stages of tapeworms with four suckers and without rostellum, occurring when adult in carnivorous animals. The tapeworms of the genus *Mesocestoides* fulfill these requirements, and Neumann, who was probably the first to suggest a connection between *Dithyridium* and *Mesocestoides*, has recorded (1896) some observations in support of the view that *Dithyridium bailleti*, occurring in dogs and cats, is a larval stage of *Mesocestoides lineatus*, which occurs in the same hosts. The results of some feeding experiments which Neumann performed, although not conclusive, tend to show that he was on the right track, and offer encouragement for further investigations along the same lines.

If Neumann is correct in his opinion as to the identity of *Mesocestoides lineatus* and *Dithyridium bailleti*, it may be inferred on the basis of analogy that the tapeworm cysts found in the marsupial wolf are intermediate stages of tapeworms belonging to *Mesocestoides*, or a nearly related genus. Although it is not impossible that the wolf may have been already infested when received at the Zoological Park, it seems more likely, since none of the cysts showed degenerative changes as would be expected if the infection were of old standing, that the infection was comparatively recent and the chances favor the probability that the wolf became infected from swallowing the eggs of tapeworms harbored by some of the neighboring animals at the Park.

As a name for these larval forms I would propose *Dithyridium cynocephali*.

EXPLANATION OF FIGURE

Plate II

Fig. A. *Dithyridium cynocephali* encysted in muscle of marsupial wolf.
× 35.